



## WILLIAM T. PECORA AWARD

DR. MOUSTAFA T. CHAHINE

In recognition of his scientific achievements in the field of atmospheric remote sensing.

Dr. Chahine has made original and important contributions in the study of the Earth and its atmosphere by remote sensing from space during the past 20 years. He has also had a significant role in establishing atmospheric remote sensing as a branch of physics. Dr. Chahine is widely recognized within the international scientific community for his major contributions to radiative transfer modeling and the development of inverse techniques for quantitative interpretation of remotely sensed data. Most notable is the development of the "Relaxation Method" for inverse solution of the full radiative transfer equation, which has been used in retrieving each atmospheric parameter in the most accurate way without depending on prior statistical assumptions. This method has been widely used for retrieving atmospheric temperature profiles for studying the atmospheres of Earth, Mars, Venus, and Jupiter.

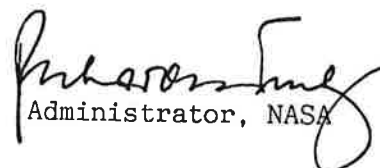
Dr. Chahine has contributed to the development of new techniques for analyzing the multispectral remotely sensed data in studying the atmospheric processes. These methods have been applied to the analysis of data obtained by the High Resolution Infrared Sounder and the Microwave Sounding Unit on National Oceanic and Atmospheric Administration weather satellites. He has played a major role in development of the first complete global climate data on temperature and humidity, snow and ice cover, cloud distribution, land and ocean surface temperature, and total ozone loading of the atmosphere. In spite of his management responsibilities as Chief Scientist at the Jet Propulsion Laboratory, Dr. Chahine has remained active in research. He has been widely published in the fields of atmospheric radiation and fluid dynamics in the past 20 years, and he remains a major contributor in these areas.

Dr. Chahine has contributed to the development of new remote sensing systems for characterizing the atmospheric states and processes with improved spatial and temporal resolution. He developed the Advanced Moisture and Temperature Sounder, a precursor to the Atmospheric Infrared Sounder (AIRS) proposed for NASA's Earth Observing System, and he is the team leader for AIRS investigations.

In addition to his scientific accomplishments, Dr. Chahine has been very active in the definition of future scientific initiatives. He has served on a number of national and international scientific committees, and he continues to be very active in planning for future major scientific initiatives. He is currently serving as the Chairman of the Science Working Group, World Meteorological Organization's Global Energy and Water Experiment, and a member of the National Academy of Sciences Board on Atmospheric Sciences and Climate. Dr. Chahine is a fellow of American Physical Society and British Meteorological Society.

Considering these exceptional accomplishments, it is our pleasure to grant the William T. Pecora Award for 1989 to Dr. Moustafa T. Chahine.

  
Secretary of the Interior

  
Administrator, NASA